



User's Manual



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Tracking URL: <http://tracking.fleetminder.com.au/fleetfinder>

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1.0 INTRODUCTION

Congratulations on your purchase of fleetfinder HYBRID!

fleetfinder HYBRID is an exciting Australian designed product that enables you to personally take control of the security and tracking of your assets.

The fleetfinder HYBRID system works independently, but has Inputs and Outputs, which means it can be connected to any existing alarm system for alarm notification or additional triggers. The Inputs and Outputs can be configured to control a range of different features.

The fleetfinder HYBRID has a variety of different ways of reporting an event, or reporting to a command. The fleetfinder HYBRID is fitted with a GSM/GPRS & Iridium module that allows for GPRS, SMS & Iridium reporting.

When using GPRS or Iridium, the fleetfinder HYBRID will log data on our tracking website, for easy reviewing by fleet managers, or owners. The fleetfinder HYBRID reporting can be set to many different intervals, for tracking accuracy. For SMS reporting, the fleetfinder HYBRID, can either report the co-ordinates to the tracking website, or can report a link for a map, that can be viewed on any GPRS mobile phone.

Unlike other tracking products on the market, fleetfinder HYBRID use by SMS does not require a subscription to a base monitoring service for basic functions. However, in most cases, we recommend that fleet managers subscribe to our web service. The vehicle history is available in a range of formats online and retrievable at any time via our optional subscription service.

NOTE: For the full features of the online tracking feature, please refer the *Online tracking manual*.

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2.0 PACKAGING CONTENTS

Before commencing installation, please make sure all components listed here are accounted for. In the packaging, you should have:

- 1 x fleetfinder HYBRID unit
- 1 x SOS Emergency Button
- 1 x GPS Antenna
- 1 x GSM Antenna
- 1 x Iridium Antenna
- 1 x Main Wiring Harness
- 1 x Accessory Wiring Harness
- 1 x Antenna Mounting Bracket
- 1 x SMA Extension cable (to suit Iridium Antenna)
- 1 x Installation Manual
- 1 x User's Manual

- Optional accessories can be supplied on request.
- Also required: **1 x wireless telemetry SIM Card**
(Telstra recommended)

3.0 PRECAUTIONS

IMPORTANT: Make all wiring connections to the vehicle and antenna connections to the correct sockets BEFORE connecting the main plug to Fleetfinder Hybrid. (Refer to the step by step Installation Manual)

It is strongly recommended that the units SIM card is first registered, contains credit and is tested before installation is commenced. Testing will require a valid SIM service. Ensure that the SIM does not have the PIN number request enabled.

For GPRS online tracking, the SIM card must be GPRS enabled. When installing the GPS antenna, make sure that the coaxial cable does not get bent or crimped.

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Always keep fleetfinder's phone number confidential and account paid up for pre-paid services. Remember your fleetfinders PIN & phone number, no one else should know them. For Online Tracking, please ensure that the SIM card is GPRS enabled (for more information on this please contact your SIM card service provider)

Outputs are **NOT** recommended for use to directly or indirectly immobilize an operating vehicle. Immobilizing a vehicle in motion is extremely dangerous. **The general purpose outputs are to be used to disable the vehicle's starter motor only.**

This device is not to be used for unauthorised monitoring or tracking.

- Do not operate this device where mobile phones or radio transmitters are not permitted.
- Do not operate on aircrafts.
- Do not operate near sensitive electronics such as engine, brake, or air-bag systems.

• **Electrical Safety:**

Designed to work from 12 volt or 24 volt DC only. Internal Fuse included.

• **Explosive Atmosphere:**

The fleetfinder Hybrid uses the GSM and Iridium networks, and it is not advisable to request tracking during refueling, at blast sites or at chemical sites etc.

• **Medical Equipment:**

Some medical devices such as pacemakers may be inhibited by GSM signals. Check with a doctor or medical equipment manufacturers for more advice on this issue.

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• **Aircraft safety:**

When transporting this equipment by air, ensure the unit is totally disabled, by removing the SIM card from the SIM card slot. And ensuring the Red power LED is switched off.

(In case the device needs to be shipped, but the unit is working under backup battery, please press and hold the "RESET" button until all lights turn off)

• **Other Precautions:**

Outputs:

- The outputs are rated at 300mA max.
- As default the outputs are set to trigger low. (ground)
- Due to outputs being limited to current, we recommend using a Relay for outputs.
- The outputs are most commonly used for Unlocking doors, Sounding horn and disabling starter motor, but can be used for almost anything.

Inputs:

- The inputs can be connected to almost any electronic circuit, however please note that there is 1 positive trigger (+12V or +24V) input, and 1 negative trigger (GND) input.

Refer to the Installation manual for more information.

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4.0 OPERATING REQUIREMENTS

• Environment

Do not install fleetfinder HYBRID in direct sunlight or directly under any areas exposed to direct sunlight or extreme heat. fleetfinder HYBRID incorporates sensitive electronics and is to be installed in the vehicle cabin only.

Keep the unit installed in a secure location that is to be free of dust, and moisture. For a stealth install it is recommended that the fleetfinder HYBRID is kept away from any radio antennas/speakers, as it may indicate that there is a GSM network connection present to the vehicle operator.

• Power

fleetfinder HYBRID operates on a 12 volt or 24 volt supply only. If fleetfinder HYBRID has a voltage higher than the operating voltage applied then the device will fail to operate and could cause internal damage to the unit. If the power supplied is below the minimum to operate, the unit will send a warning, if programmed to do so, and may switch to backup battery power.

See fleetfinder HYBRID specifications.

The built in backup power supply allows fleetfinder HYBRID to continue to operate and alert you if your vehicle battery power is severed. The backup battery is float charged by your vehicles electrical system.

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• GPS/IRIDIUM antennas location

fleetfinder HYBRID is able to determine the exact location of your vehicle by the use of the incorporated GPS receiver. For the GPS to work most effectively, the external GPS antenna must be located in a position with as much view of the sky as possible.

The GPS Antenna will generally operate through non metallic objects.

Some suggestions include high up under the dash and below the rear parcel shelf. The black face of the antenna is the side which must face skyward. Ensure before completing the installation that the antenna is secured firmly in place.

Before picking a location in your vehicle for the GPS antenna, it is best to first connect the GPS antenna to the fleetfinder HYBRID and apply power. Shortly after powering on, you will observe the RED LED on the unit turn on, this means the unit is receiving GPS data. If this does not happen, place the antenna on the roof of your vehicle, making sure that your vehicle is outdoors. Wait till the LED comes on and stays on.

This now indicates HYBRID has a fix on your vehicles location. Please be patient as with a cold start (first power up) this process of satellite acquisition can take up to 5 minutes (in worst case).

The fleetfinder HYBRID operates using the GPRS and Iridium network. Please refer to the LED Troubleshooting Manual for codes status.

Iridium Communication will activate in case GPRS signal is lost. Please ensure that the Iridium Antenna has a clear view of the sky. Use the included GPS/GSM/Iridium mounting bracket where required.

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• Minimal Installation

If you would like to use fleetfinder HYBRID for GPRS and Iridium tracking only then all you need to do is simply connect the device to a constant 12 or 24 volt source and place the GPS/GSM and Iridium antenna in a suitable location.

The fleetfinder HYBRID system should be installed at least 60cm (2 feet) away from your vehicles wiring and electrical systems to prevent interference.

Always refer to the LED Troubleshooting Manual for correct operating codes.

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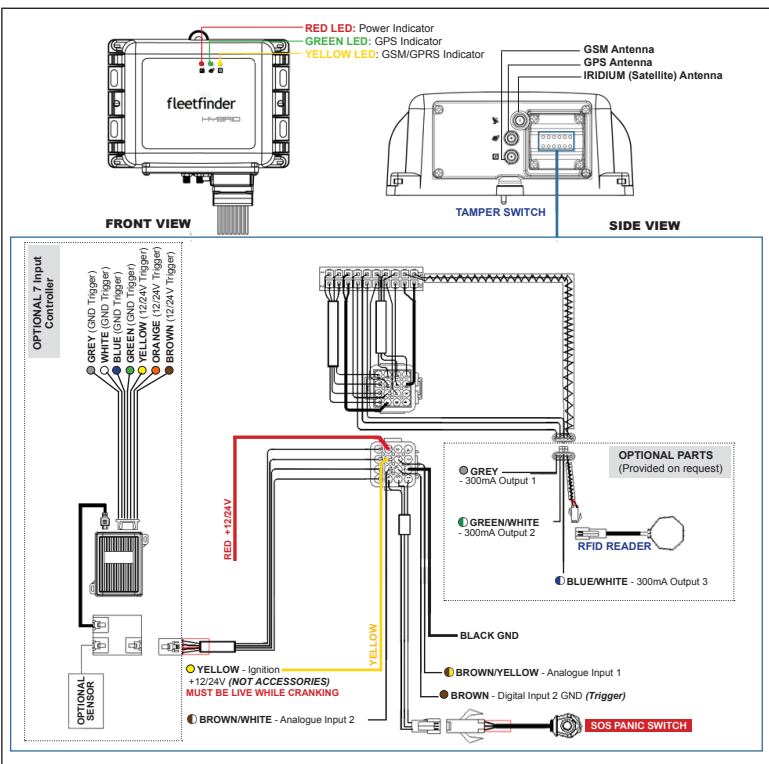
5.0 BASIC FUNCTIONS

GPRS: Live tracking with Fleetfinder tracking software	External GPS Iridium & GSM Antennas: Allow for excellent GPS Iridium & GSM reception in the most awkward installation sites.
Iridium Satellite short burst data support: HYBRID support satellite short burst data. While there is no GSM coverage, Iridium Satellite module start communicates with server. Unit sends compressed report to server, and server can send command to control or configure unit.	Reports: There are several types of reports including: Vehicle Activity Report, Vehicle Site Report, Vehicle Mileage Report, Vehicle Stop Report, Vehicle Trip Report, Vehicle Over-Speed Report and Vehicle Idle Report.
6 x inputs (1 Digital inputs, 2 Analogue inputs, 3 Reserved inputs): Reserved and programmable. Typically used for interfacing automotive security systems. However it can be configured for other purposes such as accessories, switch, door open or temp switch.	3 x outputs: For controlling external relays such as unlock door, disable starter motor or sound siren etc.
SMS: Reporting of vehicle location, speed and direction sent direct to users' mobile phone via sms, or your pc via GPRS.	RFID Card: can be used for individual drivers, with the optional features of vehicle immobilisation without valid RFID card authorisation. Easily assign authorised or unauthorised drivers for each vehicle.
Map Views: • Hi-res aerial and satellite imagery. Easy to read dynamic maps. Simple drag, pan & zoom controls. • Intuitive user experience. Unrivalled map detail. • Two way GPRS messaging for main functions. • 2D, 3D, Birds Eye View and the latest Street View through Virtual Earth and Google Maps. • Reverse Geocoding showing address.	Easy Online Track Features: Automatically resizes to display all vehicles. Replay a day activity for single/multiple vehicles. Draw Geofences directly onto the map. Multiple reports (Activity, Idle, Overspeed, Mileage, etc.) Secure Log-in Page: Secure and reliable. Fleetfinder tracking system allows you to use WEB browser to monitor your vehicles. Each user is supplied with their own unique username & password. The Fleetfinder tracking system allows you to monitor more than one unit at one time.

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6.0 WIRING DIAGRAM



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7.0 THEORY OF SMS OPERATION

NOTE: The fleetfinder HYBRID system can use SMS reporting as well as GPRS reporting at the same time, refer to command list for setting this event.

Fleetfinder HYBRID authenticates an incoming text messages by comparing the senders details (phone number) to that of the primary control identity which is stored in the Fleetfinder HYBRID flash memory.

Therefore, fleetfinder HYBRID is only able to be controlled by its primary control identity. This level of security stops someone else from gaining access to your fleetfinder HYBRID and potentially your assets. For event reporting such as geofencing, or alarm trigger, a second any identity can also be set to receive alerts.

(NOTE: Secondary identity cannot control the unit, can only get event alerts.)

It is even better if the phone number of Fleetfinder HYBRID is kept confidential, along with the PIN code that you have for your fleet finder HYBRID.

• Alert Events

An "Alert Event" is any of the below occurrences which if configured will initiate a SMS or/and GPRS response.

Please note: All alert events need to be configured and enabled before they will work.

Input 1 Triggered:	Unconditional input where a label can be set, occurs every time that the input 1 wire is triggered by +12V or 24V+.
Input 1 Recovered:	Unconditional input where a label can be set, occurs every time that the input 1 wire is released from +12V or 24V+.

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Input 2 Triggered:	Unconditional input where a label can be set, occurs every time that the input 2 wire is grounded.
Input 2 Recovered:	Unconditional input where a label can be set, occurs every time that the input 2 wire is taken from ground.
Help:	Input event will send an alert message via SMS, GPRS and IRIDIUM (where enabled) to advise that the vehicle is in trouble. This will occur when the Help button has been activated.
Volts:	Occurs when the main system voltage on the Red wire goes below the amount defined by the owner for more than 5 secs.
Speed:	Occurs when the vehicle exceeds the speed limit as defined by the operator.
Tow Away:	Occurs when the vehicle is moved whilst Fleetfinder Towaway feature is armed & the ignition is off.



8.0 SMS SETUP (Unless preset from manufacture)

Please make sure you have activated your SIM card before proceeding and have disabled the message bank service. Ensure Red LED indicator is on, and the yellow light is either ON or Flashing. If not, then check the wiring and refer LED Troubleshooting Manual.

8.1 Register your phone as the primary identity.

Send SMS:

PIN 0000

Wait for response.

8.2 Now change your PIN

The factory default PIN (or other defined PIN) as with all other commands can only be changed from the primary identity.

To Change the PIN:

Send SMS:

NEWPIN 1234 (Where 1234 is your new PIN)

Wait for response.





8.3 Set secondary identity (only receives events)

(The secondary identity is used for receiving events only, not controlling the device.)

Send SMS (from primary number):

PH2 +61423123456 (Where+614231234456 is the secondary contact number) (Send PH2 without a number to turn this feature off)

Wait for response (Primary Identity)

8.4 Send a map to primary phone number

Send SMS (from primary number):

MAP

Wait for response.

Fleetfinder HYBRID unit will provide a URL link.
Map can be viewed through any GPRS phone.



8.5 Command List

Fleetfinder Hybrid Command	Command Purpose	Default setting	Options	Example
PIN XXXX	Pin number security, for the access of the Fleetfinder. Also used for setting the primary identity. And firmware upgrade password.	PIN 0000 (Used to set the primary identity and firmware upgrade password.)	PIN XXXX (used to change the primary identity, as long as the PIN number is correct)	PIN 1234 will check the pin number in the unit, and if void, will ignore the message, but if correct, it will change the primary identity to the phone number where the message was sent from.
NEWPIN	Used to change the pin number from the default setting	No default	NEWPIN XXXX where XXXX is the new 4 digit pin number	NEWPIN 1234 will change the pin number from the unit, as long as the message is sent from the primary identity.
PH2 XX	Used to set secondary identity for alerting	No default	PH2 XX where XX is the secondary phone number, note. PH2 without the number, will disable this feature.	PH2 0412345678 will set the secondary number to 0412345678
INPUTS	To set input parameters			
LABELIN N X (admin only)	Renames the label heading for an input (Used for recognition of the input when a message is sent via SMS)	No default	Up to 16 characters for all 3 inputs. LABELIN N X where N is the number of the input (1 and 2), and X is the name for the input	LABELIN 1 Ignition will set the name of the input 1 to "Ignition"
DELAYIN N T	To set a delay timer on an input trigger.	No default	Used to set a delay for input triggering, DELAYIN N T where N is the number of the input (1 and 2) only, and T is the delay time in seconds.	DELAYIN 2 20 will set the input 2 delay time for 20 seconds, before sending an alert,
GPISMS N X (SMS Only)	To enable SMS alerting for a defined input.	No default	This feature is used to enable or disable SMS alerting for a particular input. GPISMS N X where N is the number of the input, and X is the condition (ON/OFF)	GPISMS 2 ON will enable sms alerting for Input 2.
SPEED KKK	To notify the primary identity when the Speed limit is exceeded.	Default is off	SPEED KKK where KKK is the speed in Km/h. SPEED 00 disables Speed alerts.	SPEED 65 will trigger when the speed of vehicle goes over 65km/h.
OUTPUTS	To set/enable the outputs			
SETGPO N X S	Used to set the output type	No default	SETGPO N X - Where N is the number of the output, and X is the trigger condition (Latch, Pulse and Cycle)	SETGPO 1 L - Will set output 1 for Latch
LABELGPO N X	Renames the name heading for an output	No default	Up to 16 characters for all 7 outputs. LABELGPO N where N is the number of the output, and X is the name chosen.	LABELGPO 1 Siren will set the label of output 1 to "Siren"

Fleetfinder Hybrid Command	Command Purpose	Default setting	Options	Example
GPO N X	Command to turn an output on or off.	Default setting is all outputs switched off.	GPO N X where N is the input number, and X is the condition (ON/OFF)	GPO 1 ON - Will trigger output 1 to switch on.
SPEED K,X	To notify the primary identity when the Speed limit is exceeded.	Default is off	SPEED K X where K is the speed in Kmh, and X is the debounce time in seconds, before the next trigger is sent. SPEED 00 disables Speed alerts.	SPEED 65,20 will trigger when the speed of vehicle goes over 65kmh, and will wait for 20 seconds before sending the event report again.
STATUS	Reports back with the features that are enabled on the Fleetminder.	No default		
SYS	Reports back additional unit parameters, including the Voltage, GPS and GSM signal strength etc.	No default		
TOW X Y	Enables or disables the Tow away feature.	default is off	TOW X Y where X is the distance in metres, and Y is the condition (ON/OFF) This feature will only work when the Ignition is off (input 1)	TOW 0 OFF will turn the Tow away feature off, alternatively TOW 100 ON will turn the tow away feature to trigger when the vehicle has moved 100 metres from its current location.
VOLTS V	Sets and enables the low voltage alert represented in percentage.	Default is off	VOLTS V where V is the voltage in percentage(12V application, 12V is 100%, and 24V application 24V is 100%, for use in 12V and 24V systems.	VOLTS 80 will set the low voltage warning to 80% of 12V in a 12V application (9.6V)
VOLTS OFF	Sets the VOLTS command to disable after it has been triggered.	Default is on		Turns feature off after low voltage alert has been triggered
LOCATION	LOCATION command when sent alone will report the current location.	Invoked by user.		
SMSALLEVENTON	Command to enable the SMS reporting for events from the unit. So basically to be able to choose whether to have sms event reporting.	Depends on the GPRS connection	Will enable SMS event reporting for: speed alert, tow away alert, geofence, voltage alert, input triggers (depending on GPISMS command), G trigger, AD input (1 and 2) trigger (all alerts) and stopped report.	SMSALLEVENTON will enable the sms reporting of events (conditional in options). Such as Geofences or input triggers. NOTE: Panic alert can not be turned off for SMS reporting
SMSMAINEVENTON	Command to be able to control Grouped SMS events.	Default is on.	Will enable SMS event reporting for ONLY speed alert, tow away alert, gps antenna unplugged, geofence, voltage alert and input triggers (depending on GPISMS command), and only AD1 when set to Temperature for Max and Min reporting. Will not send alerts for G trigger, AD input (1 and 2) trigger and stopped report.	SMSMAINEVENTON will enable the sms reporting of events (conditional in options). Such as Geofences or input triggers. NOTE: Panic alert can not be turned off for SMS reporting

Fleetfinder Hybrid Command	Command Purpose	Default setting	Options	Example
SMSEVENTOFF	Command to disable the SMS reporting for events from the unit. So basically to be able to choose whether to have sms event reporting.	Depends on the GPRS connection	Will disable SMS reporting for events: 138 (tow away alert), 101 (overspeed), 142 (stopped), GEOFENCE alerts, Input TRIGGERS depending on GPISMS command, VOLTS reporting,	SMSEVENTOFF will disable all the sms reporting of events or input triggers (conditional in options). Will still respond to SMS commands. NOTE: Panic alert can not be turned off for SMS reporting
MAP	Command to allow users, using the sms function only to view their vehicle on a map on their mobile phone using GPRS.	no default		MAP will invoke a response from the unit, that will provide a URL link, that can be viewed through any GPRS phone.
REBOOT	This command is used when a unit needs to be restarted.	No default		REBOOT will cycle the power on the device to make it restart, in case it needs to be restarted;
GREPORT X	This command is used for setting up the acceleration or deceleration reporting using the crash sensor	No default	GREPORT X where X is the G rating.	GREPORT 2 will set the unit to report when it senses a G rating of above 2G.
GPSLOCK X	Command to lock the GPS signal. To avoid drifting issues	No default	GPSLOCK X where the X is the ON/OFF	GPSLOCK ON will turn on the GPS lock feature only when the ignition is switched off, and in case the device is not in sleep mode.
RFID X Y	Command to set the valid RFID tag to an RFID number.	No default	RFID X Y where X is the RFID number, and the Y is the RFID tag number.	RFID 2 12345678 where the label for the RFID is 2, and the 12345678 is the RFID tag number
QUERYRFID	Command to query all the RFID's that are set on the device.	No default		QUERYRFID will return all the set RFID numbers, and tags.
SETRFID X Y	Command to set the RFID for enabled or disabled.	All enabled	SETRFID X Y where X is the number of the RFID list, and Y is the option for ON / OFF	SETRFID 2 ON will enable the number 2 RFID tag to be used.
AUXIN N X	Command to be used with the auxillary inputs.	Default is all off.	AUXIN N X (where N is the auxillary input from 1 - 7, and X is the status ON/OFF)	AUXIN 2 ON will turn Auxillary input 2 triggering on.
AUXINALLON	Command to be used with the auxillary inputs.	Default is off	AUXINALLON will turn all the auxillary inputs on.	AUXINALLON will turn all the auxillary inputs on.
AUXINALLOFF	Command to be used with the auxillary inputs.	Default is on	AUXINALLOFF will turn all the auxillary inputs off.	AUXINALLOFF will turn all the auxillary inputs off.

8.6 SMS Message format explained

The following information displays the format of an SMS message received from the device. The Message parameters are separated by a comma “,” and each part is explained below.

SMS FORMAT

**Fleetminder,Command,Current080527,114236,S1234.7536,
E11234.5678,000,44000000,CFG:LOCATION**

• LABEL (Fleetfinder)

The fleetfinder label is pre-set for online tracking and will be unique for every device. This usually consists of a 4 digit number that is used as a unique identifier.

• EVENT (Command)

The event includes the reason that the SMS message was sent. In most cases, when a command has been sent to the device, it will respond with COMMAND, otherwise if an input trigger has occurred, it will respond with the input name, such as ACC, or DOOR.

(Note: Input names can be set separately, refer Command List)



• GPS FIX (CURRENT)

CURRENT indicates that the GPS data presented is current and indicates that the location provided is where your asset is now. Alternatively if your asset was outside and then went under cover (such as your vehicle being driven into garage). Then this field will display LAST. In this case the location and the time of your HYBRID the second before it went under cover is recorded. Both the CURRENT and LAST messages should be considered with the UTC time given in the next line. Satellite count.

• UTC DATE/TIME (080527,114236)

This line contains the UTC date and time. An example is 080527, 114236. This reads the date as year (08)/month(05)/day(27) format and the time 11 hours 42 minutes and 36 seconds or 11:42:36 AM. You will need to add your time difference to determine your local time.

• COORDINATES (S1234.7536,E11234.5678)

This line presents the latitude and is in the form:

dd: minutes.minutes, eg. **S1234.7536**

and the longitude and is in the form:

ddd: minutes.minutes, eg. **E11234.5678**

• SPEED (000)

If your vehicle is stationary then this line will show 000. However, if your vehicle is moving the exact speed will also be detailed.



• UNIT STATUS (44000000)

The last line (44000000) is irrelevant for SMS reporting, but will always appear as a summary. It confirms the message in a ASCII format to be recognised by the tracking server. It is kept in the reporting message for Status Confirmation.

• RESPONSE (CFG: LOCATION)

This is the response to event command. In this case the response message was received due to the LOCATION command being sent. Everytime that a message is sent in query to the fleetfinder HYBRID, it will respond with the command included in the message.

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9.0 GPRS & IRIDIUM ONLINE TRACKING

This section explains the GPRS & IRIDIUM online tracking. For further information, please refer to the Complete Web User Online Tracking Manual available from the help menu on the web interface.

In most cases when the fleetfinder Hybrid system is ordered, it will automatically be subscribed to our online tracking server. Our tracking server is Web based, which means it can be accessed from any computer with an internet connection. For security purposes, a username & password is used.

The unit automatically reports to the Tracking Server, and logs all the data for reviewing. These reports can then be extracted into different formats such as PDF, or printed for reference. Real Time Tracking is available, whilst also being able to use the **Replay A Day** feature, which will show the activity of a vehicle on a chosen day. The Tracking Server can provide a variety of different reports, whilst also being able to send GPRS commands to control the inputs/outputs and request further information from the unit.

The reports that can be viewed from the Tracking Server are explained in brief:

• Vehicle Activity Report

This function returns the user with an “**Activity Report**” on the selected vehicle over a specified date range. The activities can include ignition on/off, panic alert, input triggered etc.

• Vehicle Site Report

This function allows the user to view the “**sites**” that the vehicle fleet has visited on a per vehicle basis, per site basis, or a combination of both.

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● Vehicle Mileage Report

This function returns the user with a **“Mileage Report”** on a specific vehicle, number of vehicles or all vehicles over a specified date and time range.

● Vehicle Stop Report

This function returns the user with a **“Stop Report”** on the selected vehicle over a specific date and time range.

● Vehicle Trip Report

This function returns the user with a **“Trip Report”** on the selected vehicle over a specific date and time range.

● Vehicle Over-Speed Report

This function returns the user with a **“Over Speed Report”** on the selected vehicle over a specific date and time range.

● Vehicle Idle Report

This function returns the user with a **“Idle Report”** on the selected vehicle over a specific date and time range.



10.0 LED TROUBLESHOOTING

The following LED conditions described below determine the unit operation.

RED LED  (Power Indicator)	On, solid state	Unit powered by main power.
	Flashing – Two quick flashes, then pause for 2 seconds (repeated)	Unit is operating on Iridium communication, as there is no GPRS signal available.
	Flashing - On / Off every second	Unit operating under backup battery (check vehicle power supply)
YELLOW LED  (GSM/GPRS Indicator)	Off	There is no power to the unit (check fuse, and connection of the red and black wires.)
	Flashing	Unit is registered on the network, and connected to the tracking server.
	On but not flashing	Unit is registered on the network, but not connected via GPRS. – The unit is unable to connect to the server. Please use debug tool to identify where the problem is. Debug tool instructions supplied separately. If the LED comes on solid, and stays on solid for a period of about 1 ~ 2 minutes, then turns off for 30seconds, before turning on again, this means that the device has weak GSM signal, and it is trying to acquire GPRS.
GREEN LED  (GPS Indicator)	Off	Unit has one of these 2 possibilities. 1. Means the device is unable to register onto the network. Please ensure the sim card is inserted correctly. And that the sim card is valid, and activated (Can be checked by trialing the sim in a mobile phone). In case there is a pin on the device, please ensure that the pin is removed (this can be done when a sim card is inserted in a phone, by accessing the security menu.) 2. Means that the device has switched to Iridium communication. The Red LED of the device should be flashing twice with a 2 second pause.
	On	The device is able to get a current GPS location.
	Off	The device is unable to get a current GPS fix. Please check the antenna location, and ensure that it has a clear view of the sky.



Further explanation of the LED functionality is described below:

RED LED (Power Indicator)	When the unit is powered on using main power, the LED will be permanently on. When the unit is powered on using main power, but is using Iridium communication because there is no GPRS connection available, the LED will flash two quick flashes then a two second pause. (Repeated) When the main power is cut, the unit will switch to backup battery mode, the LED will flash until the backup battery runs out of power. Troubleshooting: Check that you have a valid 12V or 24V source connected to the device. The Red wire should be connected to the positive terminal, and the Black wire should be connected to the Ground terminal. If there is power applied to these wires, please check the power supply by using a Voltmeter across Red and Black wires of the device. If there is 12V supplied but the device is still not powering up, please disconnect both wires, then leave the device unplugged for 5 minutes, then reconnect. This process will reset the internal fuse on the device.
YELLOW LED (GSM/GPRS Indicator)	The yellow LED will flash when the device is connected to the tracking server with a valid GPRS connection. It will stay on continually when it is in sms mode only, or when the GSM is present but there is no connection to the server. The LED will turn off when the device switches to IRIDIUM communication. Troubleshooting: If the yellow light is not on at all, please ensure the GSM antenna is connected, and that the sim card is properly inserted, with the gold terminals facing the circuit board. Please ensure the terminals are clean, and the sim card clips into place appropriately. If this fails, please put the sim card into a phone, and make sure that it is registered, and that you are able to send a message from the phone. Please ensure the sim pin on the sim card has been disabled (this can be done in the security settings in a mobile phone). If the yellow light is on, but not flashing, please ensure that you have the correct APN, username and password set for the network. The APN is usually different for each network provider, and can be found by calling the telecommunications provider, some telecommunications providers require a username and password to be declared, please ensure that you have these details. The APN, username and password can be set only from the primary defined phone number (please refer to the Users Manual for setting primary identity). The primary phone needs to send commands for setting the APN, username and password (these commands can be found in the command list in the users manual) If the LED comes on solid, and stays on solid for a period of about 1~ 2 minutes, then turns off for 30 seconds, before turning on again, this means that the device has weak GSM signal, and it is trying to acquire GPRS. Please take the vehicle outdoors and check the GSM reception on any phone using the same service provider. If the problem persists, please try a different GSM antenna.
GREEN LED (GPS Indicator)	This LED will stay on when there is a valid GPS fix. When there is no GPS signal, or the device is unable to get clear view of the sky, the LED will be off. Troubleshooting: Please ensure that the GPS antenna (gold connector) is connected to the middle antenna connection, and that it is mounted in a suitable spot with clear view of the sky. The vehicle must be outside to be able to get a GPS fix.

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11.0 TECHNICAL DATA

Fleetfinder Hybrid Specifications

GPS	• Channels: 20 parallel tracking • Correlators: 200,000 plus • Frequency: L1-1575 MHz • Sensitivity ■ Position accuracy (Horizontal) : <2.5m CEP autonomous <2.0m CEP SBAX • Time to first fix: ■ Hot start: <1s ■ Warm start: <32s ■ Cold: <35s • Standard GPS Software ■ NMEA message switchable: GGA, GSA GSV, VTG, RMC, GLL
GPRS	• Frequency Range(MHz): 850/900/1800/1900 • Channel Spacing(Hz): 200 • GPRS Connectivity: ■ GPRS multi-slot class 10 ■ GPRS mobile station class B • SIM Card Interface: 3.4 ~4.5V • SMS Storage Capacity: 40 in ME • Internal Memory: 3000 log internal memory
SATELLITE MODULE	• DC Supply Voltage: 5V • Baud Rate: 19200 • Frequency Range: 1616 MHz to 1626.5 MHz • Input/Output Impedance: 50Ω • Multiplexing Method: TDMA/FDMA • Duplexing Method: TDD (Time Domain Duplex) • Average Power During A Transmit Slot(MAX):1.6W

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INPUTS	• Digital Input 1 • Digital Input 2 • Analogue Input 1 • Optional 7 Input Controller can be attached. • Analogue Input 2 • RFID Scanner • Panic Switch
OUTPUTS	• Output 1 (pulse, latch or cycle) • Output 2 (pulse, latch or cycle) • Output 3 (pulse, latch or cycle)
ELECTRICAL	• Power Supply: DC 12V ~ DC 24V • Power Consumption: ■ 45mA Operating current (GPRS online) ■ 100mA Operating current (GPRS transmission) ■ 140mA Operating current (GPRS peak) ■ 22mA Sleeping mode current (GPS & Satellite module are off) ■ 120mA SBD Standby current ■ 200mA SBD Current • Backup Battery X 2: 6V 1.3Ah
OPERATING TEMP.	• -20°C~ +55°C
PHYSICAL PARAMETERS	• Enclosure Dimensions: 158(L)*136(W)*40(H) • Weight: 570g

12.0 WARRANTY

The fleetfinder HYBRID is guaranteed for a period of twelve months from date of purchase against defects in materials and workmanship under conditions of normal use.

To obtain warranty support, return the unit together with proof of purchase to the place of purchase.

• Limitations of Warranty

fleetfinder accepts no responsibility for any actions of the purchaser or user of the equipment where the equipment is not used for its intended purpose and isn't installed in accordance with the instructions provided in this manual.

fleetfinder does not accept responsibility of any consequential effects or breaches resulting from the use of this equipment in a manner which constitutes a criminal act or breach of privacy.

Note: Device and antenna shall be installed on distance greater than 20cm from human body.